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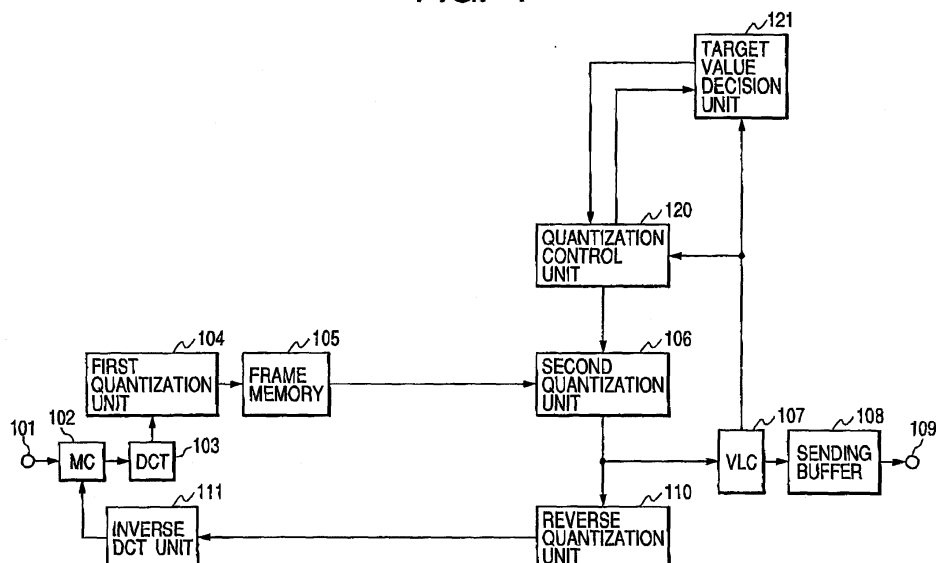
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(54) **Apparatus for digital image compression**

(57) In the coding of a dynamic image signal that conforms to the MPEG-2 Standard, when one-picture two-path coding is performed, the capacity of a memory for storing one-picture image data is reduced while lowering a throughput to be executed repetitively. Further, a throughput for estimating a generated code amount is reduced. This dynamic image compression coding apparatus has a memory that splits quantization process-

ing into division processing using a quantization matrix and division processing using a quantization scale and temporarily stores one-picture data after quantization using the quantization matrix. In the first coding performed for estimating a code amount generated every macro block, the quantization processing is performed using a bit shift instead of division. Further, round-off processing in the quantization processing is substituted for round-down processing.

FIG. 1





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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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Y	US 6 147 627 A (VOGEL ET AL) 14 November 2000 (2000-11-14) * column 5, line 45 - column 7, line 16 * -----	1-16	
Y	EP 0 899 961 A (TEKTRONIX, INC) 3 March 1999 (1999-03-03) * column 1, lines 13-26 * * column 2, lines 16-31 * -----	1-16	
Y	US 5 444 542 A (HOSHI ET AL) 22 August 1995 (1995-08-22) * column 4, lines 13-57 * * column 5, line 52 - column 6, line 2 * -----	1-16	TECHNICAL FIELDS SEARCHED (Int.Cl.7) H04N G06T
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 2 September 2005	Examiner Güttlich, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☒ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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LACK OF UNITY OF INVENTION
SHEET B

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1,3-6,9,11,12,16

image compression coding apparatus controlling the code amount using a two-step quantisation concept in order to variably control the quantisation; the coding apparatus may form part of a recorder

2. claim: 2

image compression coding apparatus controlling the code amount using a two-step quantisation concept; second quantisation step is repeatedly applied (in order to determine the final quantisation parameters)

3. claims: 7,8,10

image compression coding apparatus controlling the code amount using a two-step quantisation concept in order to variably control the quantisation whereby the code amount control is performed on block-level

4. claims: 13-15

image compression coding apparatus controlling the code amount using a two-step quantisation concept in order to variably control the quantisation; second quantisation step is determined by using a plurality of estimation-system coding means

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 30 7485

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82